



Province of the
EASTERN CAPE
EDUCATION

Iphondo leMpuma Kapa: Isebe leMfundo
Provinsie van die Oos Kaap: Department van Onderwys
Porafensie Ya Kapa Botjhabela: Lefapha la Thuto

NATIONAL SENIOR CERTIFICATE

IBANGA 12

SEPTEMBER 2024

ISAYENSI YEZOLIMO P1

AMANQAKU: 150

IXESHA: 2½ iiyure

Eli phepha lemibuzo linamaphepha ali 18.

IMIYALELO NEMIQATHANGO

1. Eliphepha lemibuzo liqulathe amacandelo amaBini angala: ICANDELO A kunye ne CANDELO B.
2. Phendula YONKE imibuzo kwi NCWADI YOKUPHENDULELA.
3. Qala umbuzo ngamNYE kwiphepha ELITSHA.
4. Nombola impendulo zakho ngokuchanekileyo, nangokwendlela ekunonjolwe ngayo kwiphepha mibuzo.
5. Unokusebenzisa isixhobo sokubala esingacwangciswa.
6. Bonakalisa ZONKE izibalo, kuquka nefomula apho zisetyenziswe khona.
7. Bhala ngocoselelo nangokucacileyo.

ICANDELO A**UMBUZO 1**

1.1 lindlela ezohlukileyo zinikwe njengeempendulo kule mibuzo ilandelayo. Khetha impendulo echanekileyo ze ubhale unobumba kuphela (A–D) ecaleni kwenombolo yombuzo (1.1.1 ukuya ku1.1.10) kwiNCWADI YOKUPHENDULELA, umzekelo 1.1.11 D.

1.1.1 Izitraktsha kwindonga zesismal intestines ezithi zandise iabsorption surface.

- A Papillae
- B Caruncles
- C Villi
- D Lieberkühn gland

1.1.2 I ... yesisu senkomo ngamanye amaxesha ibizwa ngokuthi 'yihardware stomach' ngoba kulapho iforeign objects ezinje ngamacingo zithi zigcinwe khona.

- A abomasum
- B omasum
- C rumen
- D reticulum

1.1.3 Eyona meko elungele imicrobial activity.

- (i) anaerobic conditions
- (ii) removal of waste products
- (iii) slow temperatures
- (iv) slightly acidic medium

Khetha indibanisela ECHANEKILEYO:

- A (i), (ii) no (iii)
- B (i), (iii) no (iv)
- C (i), (ii) no (iv)
- D (ii), (iii) no (iv)

1.1.4 Ezilandelayo ziprodakthi zecellulose digestion, ngaphandle kwe ...

- A oxygen.
- B vitamin B complex.
- C methane.
- D volatile fatty acids.

1.1.5 Ifaktha ezandisa imveliso yezilwanyana kwi-intensive farming.

- (i) Cultivar
- (ii) Nutrition
- (iii) Reproduction
- (iv) Management

Khetha indibanisela ECHANEKILEYO:

- A (i), (ii) no (iii)
- B (i), (iii) no (iv)
- C (i), (ii) no (iv)
- D (ii), (iii) no (iv)

1.1.6 Ifasilithi esetyenziswa ukukhusela amakhalane kumfanekiso ongezantsi ibizwa ...



- A spray dip.
- B plunge dip.
- C pour-on dip.
- D foot dip.

1.1.7 Uphawu lwenkomo ENGEKHO in distress.

- A Pawing
- B Snorting
- C Rapid tail movements
- D Grazing with other cattle

1.1.8 Iflight zone yenkomo sispeyisi ...

- A esijikeleze yona.
- B esiphambi kwentloko yayo.
- C esikufutshane emsileni wayo.
- D esiphakathi kweempondo.

1.1.9 linkomo ezisengwayo mazondliwe nge ... ration.

- A maintenance
- B production
- C maintenance and production
- D maintenance and nutritive

1.1.10 Ulandelelwana eluchanekileyo lokwakhiwa kwespermatozoa:

- A spermatogonium → primary spermatocyte → secondary spermatocyte → spermatids
- B spermatogonium → primary spermatocyte → spermatids → secondary spermatocyte
- C spermatogonium → secondary spermatocyte → spermatids → primary spermatocyte
- D primary spermatocyte → secondary spermatocyte → spermatogonium → spermatids (10 x 2) (20)

- 1.2 Bonisa ukuba inkcazelo nganye kuKHOLAM B isebenza ku**A KUPHELA**, ku**B KUPHELA**, **BOBABINI u A no B** okanye **NANYE** yethem kuKHOLAM A. Bhala **A kuphela**, **B kuphela**, bobabini **u A no B akanayo nanye** ecaleni kweenombolo zemibuzo (1.2.1 ukuya ku1.2.5) kwiNCWADI YOKUPHENDULELA, umzekelo 1.2.6 B kuphela.

KHOLAM A			KHOLAM B
1.2.1	A: B:	Protozoa nebacteria Fungi nevirus	Beneficial micro-organism kwirumen yenkomo
1.2.2	A: B:	1 : 7,25 1 : 6,25	nutritive ratio yefidi enetotal digestible nutrients (TDN) engu 75% neDP engu12%
1.2.3	A: B:	Wood shavings Grass straw	imathiriyeli esetyenziselwa ukondlala kwindlu yenkukhu
1.2.4	A: B:	Intramuscular Intravenous	I-injection efakwa emithanjeni
1.2.5	A: B:	Viable pH should be 5,4–5,9	Impawu zesimen elungileyo

(5 x 2) (10)

- 1.3 Nika igama/ithem libeli**NYE** ngenkcazelo **NGANYE** engezantsi. Bhala igama/ithem kuphela ecaleni kweenombolo zemibuzo (1.3.1 ukuya ku 1.3.5) kwiNCWADI YOKUPHENDULELA.

- 1.3.1 Iproperty yevitamis esetyenziswa ukuzahlela zibe zindidi ezimbini
- 1.3.2 Iinon-contagious disease ezibangelwa kukusilela kwezakha mzimba
- 1.3.3 Ifluid ekhusela iembryo ingabetheki
- 1.3.4 Iprotrusion yevagina kwivulva
- 1.3.5 Ubisi elisengwa kwiintsuku ezintathu emveni kokuzala

(5 x 2) (10)

1.4 Tshintsha AMAGAMA AKRWELELWE UMGCA NGAPHANTSI kwibinzana NGALINYE ngalinye kwalandelayo uwenze ANYANISEKE, bhala impendulo echanekileyo kuphela ecaleni kwenombolo zemibuzo (1.4.1 ukuya ku 1.4.5) KWINCWADI YOKUPHENDULELA.

1.4.1 Inutritive ratio yimeasure yequality yeprotein kwifidi.

1.4.2 Ingcongconi zihlasela amaxeba avulekileyo namanxeba wezinambuzane kumsila wegusha.

1.4.3 Ihypoplasia ichaza imeko apho iitesticle zingehlanga ukuya kwiscrotum.

1.4.4 Imonozygotic twins zenziwa ngamaqanda amabini ohlukileyo athi akhutshwe ngelixa leovulation ukuze akufetelizwe zizpermatozoa ezibini ezahlukileyo.

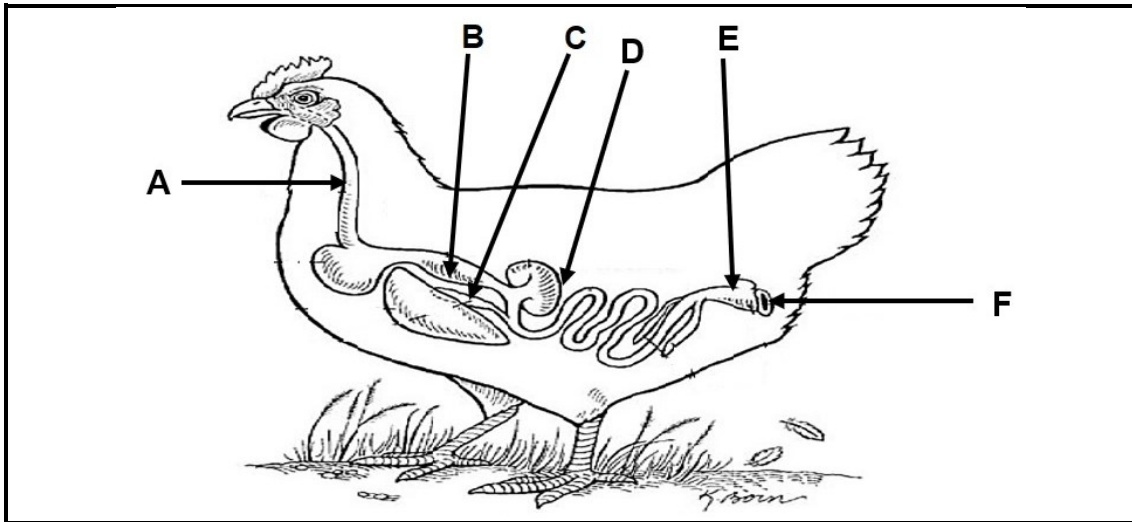
1.4.5 iDry period lixesha lokuveliswa kobisi eliqala emveni kokuzala liyokuphela emveni kwentsuku eziyi 305 kwinkomo. (5 x 1) (5)

EWONKE KWICANDELO A: 45

ICANDELO B**UMBUZO 2: ISONDLO NOKUTYA KWEZILWANYANA**

Qala lo mbuzo kwiphepha ELITSHA.

2.1 Qwalasela idayagram engezantsi uphedule imibuzo elandelayo.



2.1.1 Hlela isilwanyana sasefama esikwidayagram engentla ugxile kwialimentary canal yaso. (1)

2.1.2 Chonga UNOBUMBA wendawo kwidayagram engentla apho kwenzeka khona okulandelayo:

- (a) Inesubstance encedisa kwiabsorption yeefatty acid ne glycerol (1)
- (b) Ikhomon opening kwidigestive ne-excretory system (1)
- (c) Inxibelelene netrue stomach yegusha (1)
- (d) Iphawulwa ngemasculine wall zemechanical digestion (1)

2.2 Izilwanyana zifumana izakha mzimba kwiiprotein, carbohydrates, lipids nakwi vitamins ezizityayo. Limineral ziyinxalenye yediet kwaye ziyafuneka ngokwemilinganiselo eyahlukileyo. Izilwanyana zifuna iiration ezinazo zonke ezi khomponeti ngokwemilinganiselo echanekileyo.

2.2.1 Chonga ifidi khomponenti eklasifaywe njenge inorganic kwinkcazelo ingentla. (1)

2.2.2 Chonga ifidi khomponenti enomsebenzi ongezantsi:

- (a) Igcinwa ikwiform yeglycogen esibindini (1)
- (b) Ifunwa ngenjongo zegrowth, reproduction neproduction (1)

2.2.3 Xela uhlobo lwenutrient uptake esebenzisa iicarrier molecule. (1)

2.2.4 Chonga ivitamin/imineral okanye ideficiency symptom ebonakaliswa ngoonobumba kwitheybhile engezantsi. UNGAPHINDI uyizobe itheybhile. Bhala impendulo kuphela echanekileyo ecaleni konobumba.

IVITAMIN/IMINERAL	UMSEBENZI	IIDEFICIENCY SYMPTOM
A	Blood clotting	Poor blood clotting kwinkukhu
Phosphorus	Healthy bones and teeth	B
C	Formation haemoglobin	Anaemia

(3)

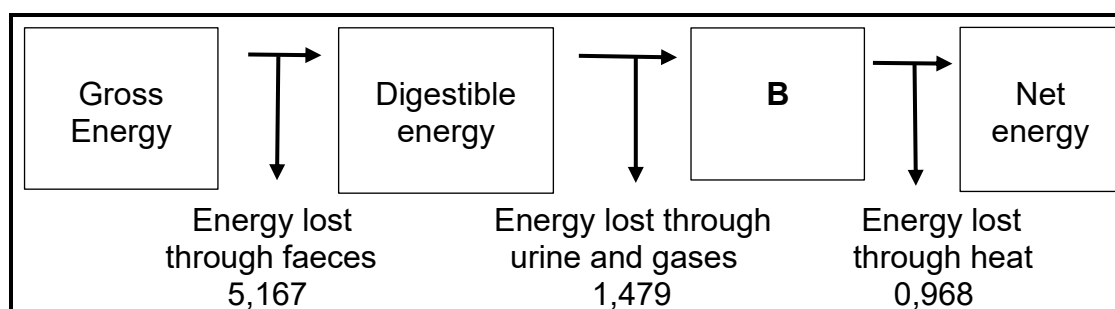
2.3 Iveluyu yefidi ifunyanwa ngokukhalithyulayitha kwedigestibility coefficient yayo. Kwifidi trial, inkomo iginye i15 kg yehabile eyomileyo yaze yakhupha i6 kg yobulongwe obunemoisture content eyi 50%.

2.3.1 Khalthyulayitha idegestibility coefficient yehabile. Bonisa ZONKE iikhalithyulayshinz. (5)

2.3.2 Ngokufutshane hlalutya idigestible coefficient efunyenwe ngentla. (1)

2.3.3 Nika iifactor zibeMBINI ezinokuba ngunobangela wokucolwa kwehabile. (2)

2.4 Igusha itya i1 kg yedry matter ngosuku kwiformulated feeding enegross energy value ene 15,648 MJ/kgDM. Iflow chart engezantsi ibonisa ukulahleka kweeneji (MJ/kgDM).



2.4.1 Chonga ieneji eboniswe ngu**B**. (1)

2.4.2 Khalthyulayitha inett energy enokufunyanwa yigusha kwiration yosuku. (3)

2.4.3 Hlalutya iikhalithyulashini kuMBUZO 2.4.2 ongentla. (1)

2.5 Idatha engezantsi inxulunyaniswe nefodder flow plan yenyanga ezintandathu

FORAGE	Yield (ton/ha)	Area (ha)	July	Aug.	Sept.	Oct.	Nov.	Dec.	DM Sum (tons)
Veld	2,19	40				10	10	20	40
Forage sorghum	12	25					43	30	73
Lucerne	15	15	40	35	52	46	15	30	
Total feeds (t)			40	35	52	56	68	80	
Shortage (t)			11	14	-	-	-	-	25
Surplus (t)			-	-	-	7	15	30	52
Livestock requirement (t)			51	49	52	49	53	50	

2.5.1 Zoba ibha grafu utholekise iitotal feed neelivestock requirements zikaJuly ukuya kuDecember. (6)

2.5.2 Khalthylatha isurplus ngenyanga kaDecember ngokwe kg. (2)

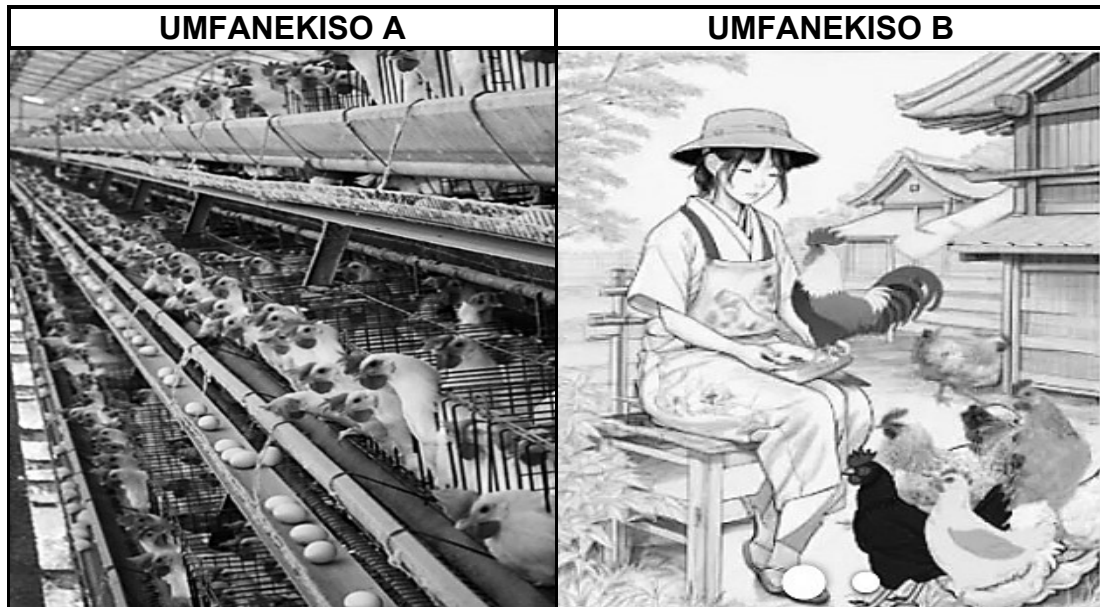
2.5.3 Nika zibeMBINI iicost effective measure umlimi angazisebenzisa ukumelana nesurplus kwinyanga kaDecember. (2)

[35]

UMBUZO 3: UKUVELISWA, UKUKHUSELWA KUNYE NOKULAWULWA KWEZILWANYANA

Qala umbuzo kwiphepha ELITSHA.

3.1 Imifanekiso ezingezantsi ibonisa ifarming systems kwezolimo.



3.1.1 Chonga ifarming system eboniswe kuMFANEKISO B. (1)

3.1.2 Bonisa injongo yefarming system evezwe kuMBUZO 3.1.1. (1)

3.1.3 Hypothesize kwimveliso yefarming system kuMFANEKISO A. (1)

3.1.4 Chaza ukuba ezifactors zingezantsi zisetyenziswa njani ukwandisa imveliso kwiextensive farming production.

(a) Reproduction (1)

(b) Nutrition (1)

3.2 Nika ifasilithi enokusetyenziswa ngokweenjongo ezilandelayo:

3.2.1 Ukwenyusa amaqondo obushushu kwindawo yokuzala iihagu (1)

3.2.2 Ukugcina amaqondo obushushu ngaphakathi endlwini (1)

3.2.3 Ukodla inkukhu (1)

3.3 Zonke izilwanyana zasefama zihomeothermic. Inxenye yefidi etyiwa sisilwanyana kusetyenziswa ukugcina isilwanyana sishushu njengoko okunye kusebenza kwiprosesi ezibalulekileyo zobomi kwisilwanyana. Amaqondo obushushu angapha kokuqonda anganomthelela ombi kwieneji ekhoyo nakwi kwiprosesi zobomi.

3.3.1 Chaza igama elikrwelelwe umgca ngaphantsi kwesicatshulwa. (2)

3.3.2 Cebisa indlela ibeNYE umfama anokukhusela ngayo izilwanyana kumaqondo aphakame ngokugqithisileyo. (1)

3.3.3 Chaza ukuzalana phakathi kwefeed intake newater intake nemveliso zefarm animal productivity phantsi kwamaqondo wemozulu aphakame kakhulu. (3)

3.4 Umfanekiso ongezantsi ubonisa indawo yokubanjwa kwezilwanyana.

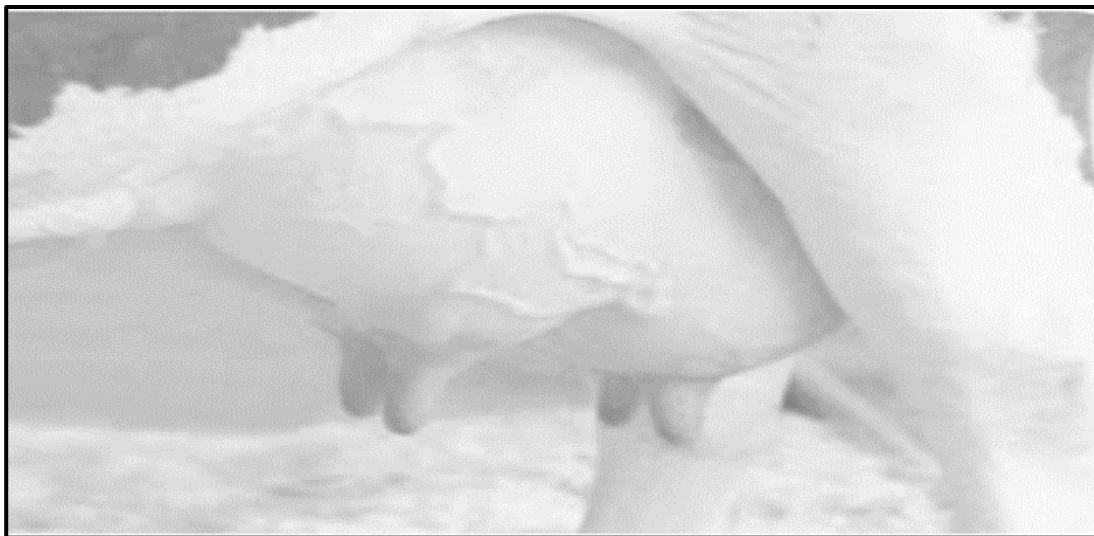


3.4.1 Xela ipen kumfanekiso ongentla. (1)

3.4.2 Nika zibeMBINI iidesign features ukufuneka umfama eziqaphele phambi kokuba adizayne ifasilithi. (2)

3.4.3 Chaza ubemNYE umsebenzi wefasilithi engentla. (1)

3.5 Umfanekiso ongezantsi ubonisa ibele eli-infected



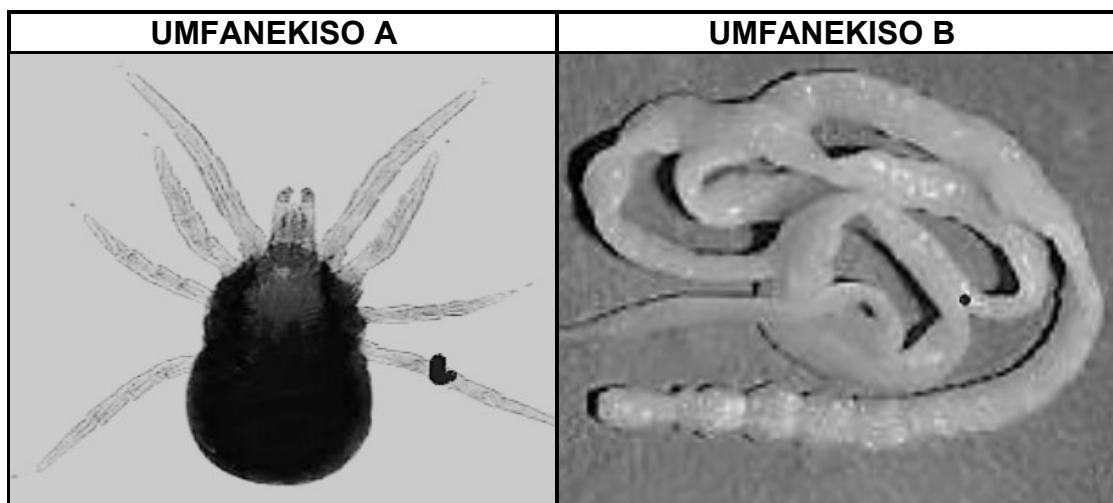
3.5.1 Nika isifo esichaphazele ibele lenkomo eliboniswe kumfanekiso engentla. (1)

3.5.2 Xela isifo esichazwe kuMBUZO 3.5.1 ngentla, ngokugxile kunobangela. (1)

3.5.3 Nika zibeMBINI impawu ezinokubonakaliswa yinkomo enesisifo. (2)

3.5.4 Chaza zibeMBINI ieconomic implications yesisifo kumfama. (2)

3.6 Idayagram ezingezantsi zibonisa izimfifithi ezihlasela imfuyo.



3.6.1 Klasifaya izimfifithi kuMFANEKISO A naku B. (2)

3.6.2 Nika isifo esenziwa sesimfifithi singabonakaliyo ngamehlo wenyama sikuMFANEKISO A. (1)

3.6.3 Dwelisa impawu zibeMBINI zesifo esichazwe kuMBUZO 3.6.2. (2)

3.6.4 Xela zibeMBINI izikhuseli zezimfifithi ezikuMFANEKISO B. (2)

3.7

Ityuwa yenye yeminerals ezibalulekileyo efunwa zizilwanyana eqhelekileyo ukudingeka ekutyeni edlelweni lwezilwanyana. Ityiwa ixutywa ne khonsetrate ukwenza iminral lick yezilwanyana xa zisitya phantsi kwezinye imeko. Ukutya ityiwa ngokugqithisileyo kungayingozi kwizilwanyana ukuvuza kwamathe okungapheliyo, ukuqunjelwa, ukwanda konxano lwamanzi. Zingafa izilwanyana ezisela amanzi anetyuwa egqithisileyo okanye xa kungongophele amanzi.

3.7.1 Chonga zibeMBINI impawu eziqhelekileyo zesalt poisoning. (2)

3.7.2 Nika ibeNYE indlela yokukhusela isalt poisoning. (1)

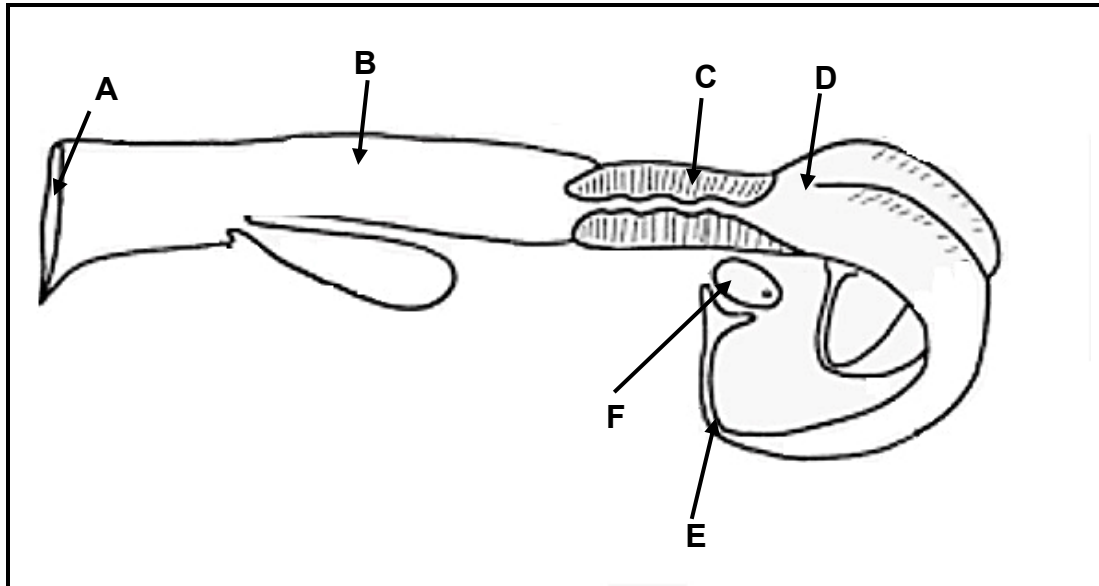
3.7.3 Nika umsebenzi ubemNYE karhulumente wokukhusela izilwanyana. (1)

[35]

UMBUZO 4: UKUZALA KWEZILWANYANA

Qala lo mbuzo kwiphepha ELITSHA.

4.1 Idayagram engezantsi ibonisa ireproductive organs zenkomo.



4.1.1 Xela ifarm animal enereproductive system engentla. (1)

4.1.2 Nika iparts ezilabhelishwe ku **B** no **E**. (2)

4.1.3 Chonga ngokubhala iNOMBOLO apho kuthi kwenzeke kona oku kulandelayo.

(a) Ivelisa ioocytes (1)

(b) Ikhusele isizalo kwimo yangaphakathi esiswini (1)

4.2 loestrus cycle ilawulwa zihormonz zesexual activity ezinkomeni. liphawuleka ngezistajis zine, ezizezi pro-oestrus, oestrus, met-oestrus and di-oestrus.

4.2.1 Xela ixesha lweoestrus cycle ephawuleka ngokwenzeka kwecorpus luteum. (1)

4.2.2 Nika ihormoni eyenza iovulation ngelixesha likhankanywe kuMBUZO 4.2.1 ngentla. (1)

4.2.3 Chaza igama elikrwelelwe umgca ngaphantsi kwibinzana elingentla. (2)

4.2.4 Nika indlela zibeMBINI ethi ibonakale ngayo inkomo edumbileyo. (2)

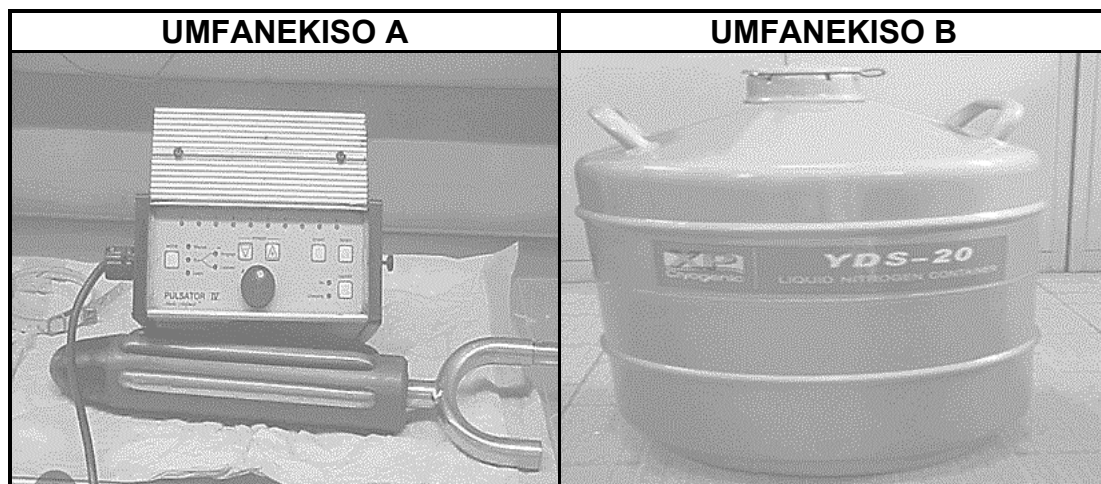
4.3 Umfanekiso ongezantsi ubonisa enye yestages zokukhwelwa kwenkomo.



4.3.1 Bonisa imating stage eboniswe kumfanekiso ongentla. (1)

4.3.2 Xela ifactors zibeMBINI ezibangela mating behaviour kwinkunzi. (2)

4.4 Izixhobo ezingezantsi zisetyenziswa ngamafama kwireproduction yezilwanyana.



4.4.1 Nika isixhobo esikuMFANEKISO A. (1)

4.4.2 Xela umsebenzi wesixhobo kuMBUZO 4.4.1. (1)

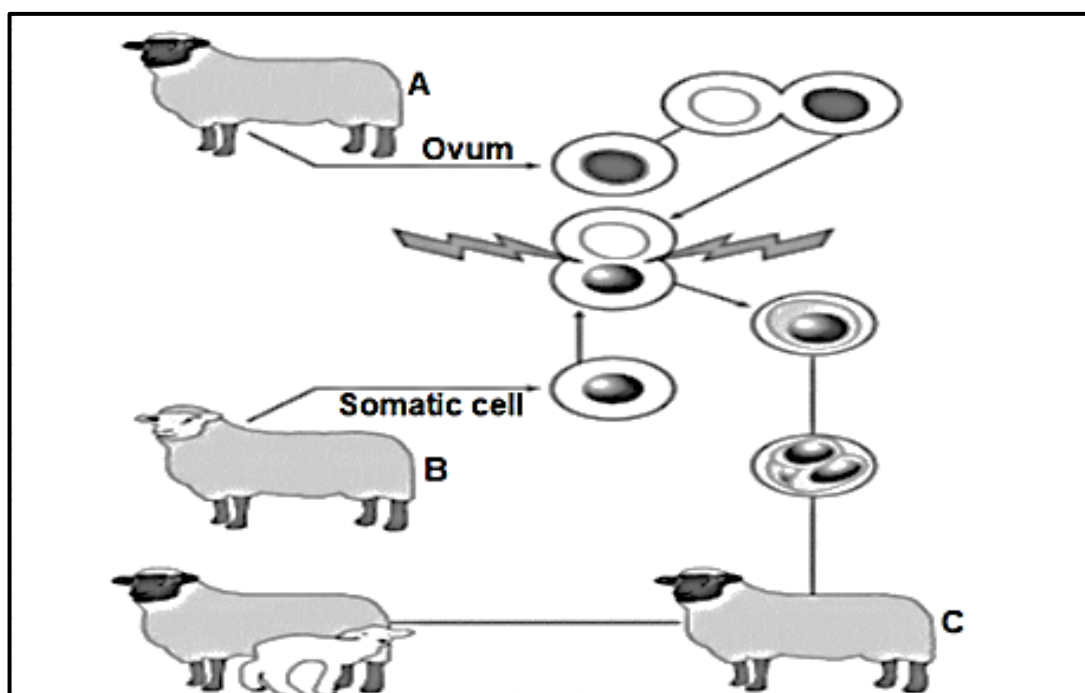
4.4.3 Nika umlinganiselo weqondo lobushushu kwisixhobo esiku MFANEKISO B xa uzakugcina isemen ixesha elide. (1)

4.4.4 Chaza imisebenzi weesemen dilutant yesemen engezantsi:

- (a) Buffers (1)
- (b) Egg yolk (1)
- (c) Antibiotics (1)

4.4.5 Chaza ngokufutshane elona xesha lilungileyo ukwenza iartificial insemination. (2)

4.5 Idayagram engezantsi ibonisa endlela yalemihla yereproductive technique.



4.5.1 Xela iprocedure kwidayagram engentla. (1)

4.5.2 Nika igama lika animal **C** kwiprocedure exeliweyo yakho kuMBUZO 4.5.1. (1)

4.5.3 Vavanya ukulungela kwereproductive technique engentla yakho kuMBUZO 4.5.1 ngokusetyenziswa ziisubsistence farmer. (1)

4.5.4 Xhasa impendulo yakho kuMBUZO 4.5.3 ongentla. (1)

- 4.6 Ngezantsi ngumfanekiso obonisa iztages ezibalulekileyo kwireproduction yezilwanyana.



- 4.6.1 Nika iprosesi eboniswe ngulomfanekiso. (1)
- 4.6.2 Xela imeko enokuphazamisana naleprosesi ingentla. (1)
- 4.6.3 Nika babebaBINI onobangela bemeko ekhankanywe kuMBUZO 4.6.2. (2)
- 4.6.4 Ngezantsi ziphases zereproduction kwinkomo,zilungise eziphases uzibhale ngokokulandelelana kwazo. Bhala KUPHELA unobumba.
- A Parturition
 B Conception
 C Gestation
 D Fertilisation
 E Ejaculation

(5 x 1) (5)
[35]

AMANQAKU ECANDELO B: 105
AMANQAKU EWONKE: 150